

Appl. No. 09/744,424
Response Under 37 C.F.R. § 1.116
Expedited Procedure
Examining Group 2827
Amdt. dated April 14, 2003
Reply to Office Action of February 13, 2003

REMARKS/ARGUMENTS

Claims 116-136 are pending in the present application. Claims 120 and 136 are cancelled. Claim 116 has been amended to incorporate the limitations of cancelled claims 120 and 136. The amendments are supported in the original claims. Claims 123-134 have been withdrawn from consideration and are cancelled herein. The Examiner has further withdrawn claims 121 and 122 as not being drawn to an elected species. Applicants reserve the right to rejoin these claims upon allowance of a generic claim.

The present invention is directed to a printed wiring board-forming sheet that includes an insulating resin sheet having a through hole inserted and filled with a conductive metal chip of substantially the same shape as the hole. The conductive metal chip is formed by punching at least one conductive metal sheet selected from a solder sheet, a solder-plated metal sheet, and a copper alloy sheet. The insulating resin sheet is made of a material selected from polyimide, polyester, polypropylene, polyphenylene sulfide, polyvinylidene chloride, ethylene-vinyl alcohol copolymer, and bismaleimide triazine (BT) resin. The present invention provides improved electrical connections between the surfaces of a resin sheet.

Claims 116-118, 120 and 136 stand rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 3,750, 278 to Baker et al. (hereinafter "Baker") in view of United States Patent No. 6,288,905 to Chung (hereinafter "Chung"). The Examiner alleges that it would have been obvious to use a copper alloy sheet as disclosed in Chung in place of the copper sheet disclosed in Baker.

Appl. No. 09/744,424
Response Under 37 C.F.R. § 1.116
Expedited Procedure
Examining Group 2827
Amdt. dated April 14, 2003
Reply to Office Action of February 13, 2003

Baker discloses a printed circuit board having through connected between conductors on opposite sides of the board which is provided by a conductive element press-fitted in a hole extending through the conductors and insulating material of the circuit board and peened at both ends.

However, Baker does not disclose that the conductive element (conductive metal chip of the present invention) is made of at least one material selected from a solder sheet, a solder-plated metal sheet, and a copper alloy sheet, or that the insulating material is made of at least one material selected from polyimide, polyester, polypropylene, polyphenylene sulfide, polyvinylidene chloride, ethylene-vinylalcohol copolymer, and a BT resin as in the presently claimed invention; or the improved electrical connections between the surfaces obtained thereby.

Chung discloses a module, such as a contact module for embedding an electronic device into a credit card, smart card, identification tag or other article, that includes a pattern of metal contacts having a first and a second surface and electrically-conductive vias built up on the first surface of the metal contacts.

However, Chung also fails to disclose that the insulating material may be made of the materials as presently claimed.

Further, Chung provides no motivation or suggestion to modify the printed circuit board disclosed by Baker to arrive at the presently claimed printed wiring board-forming sheet.

Therefore, as no combination of Baker and Chung, taken alone or in combination, discloses or in any way suggests the claimed printed wiring board-forming

Appl. No. 09/744,424
Response Under 37 C.F.R. § 1.116
Expedited Procedure
Examining Group 2827
Amdt. dated April 14, 2003
Reply to Office Action of February 13, 2003

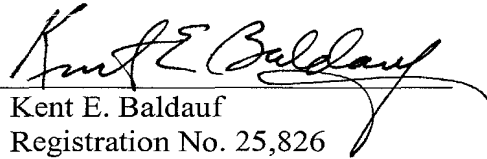
sheet including an insulating resin sheet made of at least one material selected from polyimide, polyester, polypropylene, polyphenylene sulfide, polyvinylidene chloride, ethylene-vinyl alcohol copolymer, and BT resin, the rejection of claims 116-118, 120, and 136 under 35 U.S.C. § 103(a) should be withdrawn.

Reconsideration of the rejections and objections, entry of the revised drawings, and allowance of claims 116-118 are respectfully requested.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON
ORKIN & HANSON, P.C.

By



Kent E. Baldauf
Registration No. 25,826
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818
Telephone No. 412.471.8815
Facsimile No. 412.471.4094
E-mail webblaw@webblaw.com